



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,413	09/15/2003	Dale R. Adams	59472-8022.US01	2725
63170 7590 10/05/2007 SILICON IMAGE, INC. P.O. BOX 2168 MENLO PARK, CA 94026			EXAMINER REKSTAD, ERICK J	
			ART UNIT 2621	PAPER NUMBER
			MAIL DATE 10/05/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/663,413

Applicant(s)

ADAMS, DALE R.

Examiner

Erick Rekstad

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 10-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-4 is/are allowed.
- 6) ☒ Claim(s) 1, 5, 6, 10 and 13 is/are rejected.
- 7) ☒ Claim(s) 10, 11, 12, 14 and 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 6/11/07.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This is a Final Rejection for Application no. 10/663,413 in response to the amendment filed on July 16, 2007.

#### ***Response to Arguments***

Applicant's arguments filed July 16, 2007 have been fully considered but they are not persuasive.

The Applicant argues US Patent 6,462,788 to Tan et al. is silent on a teaching of the new requirements of amended claim 1. The requirement specifically being "based on a difference between even line and odd line frequency detection values of the video stream".

The Examiner respectfully disagrees with the Applicant's reading of the Tan reference. Tan specifically teaches the detection of the color bleeding artifact based on vertical neighbors (Col 3 Lines 30-34). Tan further teaches the use of these vertical neighbors to determine a difference in order to determine if a color bleeding artifact is present (Col 3 Line 40-Col 4 Line 18).

#### ***Claim Objections***

Claim 10 objected to because of the following informalities: The claim states on the fifth line of the claim "based on a the determined difference" it should state "based on the determined difference". Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102***

Art Unit: 2621

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent 6,462,788 to Tan et al.

[claims 1, 5, 10 and 13]

As shown in Figure 1, Tan teaches a method for removing MPEG-2 chroma upconversion artifacts in a video stream comprising:

Detecting a presence of artifacts in an incorrectly upsampled MPEG-2 video stream and removing the presence of artifacts resulting in an artifact free video stream (Col 1 Lines 45-63 and Col 2 Lines 35-40).

Tan specifically teaches the detection of the color bleeding artifact based on vertical neighbors (Col 3 Lines 30-34). Tan further teaches the use of these vertical neighbors to determine a difference in order to determine if a color bleeding artifact is present (Col 3 Line 40-Col 4 Line 18).

Tan further teaches the removing the presence of artifacts comprises lowpass filtering a set of chroma data (Col 4 Lines 51-59).

***Claim Rejections - 35 USC § 103***

Art Unit: 2621

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tan et al. as applied to claim 5 above, and further in view of US Patent 5,684,544 to Astle.

[claim 6]

As shown above for claim 5, Tan teaches the use of a lowpass filter. Tan does not teach the specific lowpass filtering as required by claim 6. Astle teaches a method for upsampling chroma pixels using a 1 2 1 lowpass filter (Col 8 Lines 10-15). Such a lowpass filter doubles the current chroma data sample, adds an above chroma data sample and adds a chroma value below the current chroma sample. The total is then divided by 4. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the lowpass filter of Astle with the chromance upsampler of Tan as Astle teaches the use of the lowpass filter for upsampling chromance values (Abstract).

#### ***Allowable Subject Matter***

Claims 2-4 are allowed.

Claims 11, 12, 14 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

'DVD Benchmark-Special Report-The Chroma Upsampling Error in DVD Players'  
by Munsil et al.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

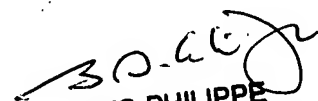
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erick Rekstad whose telephone number is 571-272-7338. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on 571-272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2621

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Erick Rekstad  
Examiner  
AU 2621  
(571) 272-7338  
[erick.rekstad@uspto.gov](mailto:erick.rekstad@uspto.gov)



GIMS PHILIPPE  
PRIMARY EXAMINER